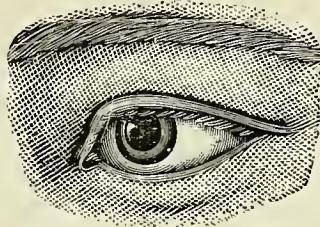


*“There Are None So Blind As Those Who Will Not See”*

# THE SCOPE



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## SIMPLE CHRONIC GLAUCOMA

Simple chronic glaucoma or glaucoma simplex is a diseased condition of the eye which is considered as devastating to sight as the more violent types of diseases. The reason for this consideration is attributed to the fact that simple chronic glaucoma reacts, to a more or less degree, in a very insidious manner which is characterized primarily by a lack of subjective symptoms. In many cases, the patient has completely lost his sight before he is aware of the fact that anything is amiss with his vision. Nor does this type of glaucoma necessarily characterize itself by signs in the anterior aspect of the eye by ordinary inspection either to the individual or to the examiner. In this type of glaucoma one must remember that both eyes are involved, either simultaneously or in succession, also that one eye is usually more advanced by the effects of the disease than the other, and this disease is of a progressive nature culminating in a congestive state.

Various authorities claim that a certain type of an eye, myopic, hyperopic, and the astigmat are predisposed toward glaucoma and attribute their decision in this matter to definite clinical observations. Others equally famous, go further and consider as an additional feature, people that are suffering from worries, insomnia, cardiac diseases, syphilis, goat, influenza, neuralgia of the 5th nerve and high blood pressure.

Brown states that simple chronic glaucoma is the result of eye strain and substantiates this statement by the fact that women suffer more frequently than men, and that dress makers and seamstresses suffer more frequently than other women. Brown continues to say that the dividing line between myopia and simple glaucoma is largely an imaginary one, which depends upon the greater or lesser degree of resistance of the fibrous envelope of the eye.

De Schwienitz contradicts this statement to some extent by claiming that a hyperope has the natural tendency to become glaucomatus and especially so if the patient's health is poor or ravaged by some type of a disease that will effect the blood.

Another authority equally famous and having as consistent a following as the others does not depend

upon the refractive condition of the eye, but depends upon the size of the eye. This authority claims that the cause of chronic simple glaucoma is not definitely known, but is attributed to the swelling of the lens, which is supposed to grow through out life, causing the space between the equator of the lens and the ciliary processes to become smaller as the patient increases in age. If the eye should be small the space may become so diminished that slight congestion of the ciliary processes may bring them in contact with the lens. The effect will be to prevent the fluid from passing through the pupil, the lens will be pushed forward, pushing the iris in front of it, making the anterior chamber shallow, and bringing the periphery of the iris in contact with the corneal-scleral, in this manner the filtration angle will be occluded and glaucoma will supervene.

Still another theory is known as the "Retention Theory" which claims that the outflow is diminished, and that fluid is contained within the chambers.

Be the causes whatever they may, several facts or features are predominant and those are: there is an over-abundance of liquid present in the chamber. The anterior chamber is shallow, and there is great pressure. The resultant is that the pressure rises above the physiologic normal and we have a disturbance of the function and structure of the eye which is called glaucoma.

The much mooted question as to the causation of glaucoma in any of its forms, simple or complex, while it may cause excellent material for debate and harangue among the medical brethren, is not of as great importance to the optometrist as is the recognition of signs, if any, and the diagnosis.

The customary signs that will make themselves apparent to the patient and of which he may complain, that is always bearing in mind the possibility that there will not be any signs or complaints may be of various types; the degree of intensity complained of may vary, depending on the patient's tendency towards being a neurotic, or the command of the English language that the patient is able to employ. Conversely the lack of complaints must not be an indication that anything is wrong, for

some patients do not wish to appear "babyish," if the vernacular of the small boy can be excused, while others are equally uncommunicative due to a negative state of mind which ironically desires the examiner should earn his money by ascertaining the irregularity and that is just what must be done, regardless of the type of patient; the examiner must determine the presence of glaucoma if it exists, in order to consider himself a competent optometrist.

The average symptoms that may be complained of by the patient are: pain which will be deep seated in the eyes, headaches of a type that may traverse the entire cranium, objects appear as though they are surrounded by rainbows, some may complain of flashes of light which resembles summer lightning, while others complain of a wall of light which passes before the eyes. The headaches may be of such great severity that they may cause nausea and vomiting; these attacks are frequently described by the medical practitioner as "billousness," whereas an intelligent examination as to the causation of this trigeminal neuralgia would show conclusively as well as emphatically a decided loss of vision and a greatly contracted field.

In the diagnosis it is of the utmost importance to recognize glaucoma in its incipient stage. For by recognizing the disease one may save the eyesight of the patient, or may restore the vision to normal.

The first consideration of glaucoma is that the disease generally makes its appearance after the patients pass the age of forty, usually about the presbyopic period, when the lens has lost much of its elasticity.

Long before any intra-ocular signs will make themselves apparent in the fundus of the slowly developing non-congestive type of glaucoma, changes will occur in the visual field which will be shown by a constriction in the nasal field. This is due to a tendency to constriction of the circulation of the temporal retina as the blood supply thru the central artery is carried by a longer and more circuitous route to the temporal than to the nasal section of the retina; according to Peters.

Other anomalies that will tend to influence the diagnosis as glaucoma when accompanying the loss of the visual nasal field and are obtainable in perimetric findings are the existence of sector like defects of the superior, inferior and temporal quadrants due to stretching, a concentric contraction of form and colors and a preservation of central vision for form and colors even though the peripheral fields are reduced to a small central area. The reason that central vision remains unhindered is attributed to the fact that a great number of nerve fibers supply the macular area, and while some of them must suffer, all do not and in this manner central vision remains good until the end. Thus many patients will fail to consult an oculist or optometrist but will see as though they are looking thru a tube, either monocularly or binocularly as the case may be, as the peripheral vision has been destroyed, until the disease has progressed to an extreme degree.

The perimetric findings will also show an enlargement of Mariotte's blind spot due to atrophy induced by edema about this point. The ophthal-

moseope furnishes the best means of ascertaining whether or not glaucoma is present. This instrument reveals the presence of glaucoma in many manners when a careful examination is made of the eye.

Some of the anterior signs that will or may aid in the diagnosis by means of theophthalmoscope are: a slight steaminess of the cornea which can be detected, the aqueous may appear a little less transparent due to turbidity, the perforating branches of the episcleral plexus may appear a trifle tortuous, or the anterior chamber may appear very shallow due to pressure on the iris.

The pupil often times will give off a greenish blue which can be seen and is the only place that the exact translations of the word glaucoma, meaning sea green is quite appropriate in the disease. The pupil is very often dilated widely and is oval in shape, the long axis being vertical.

In the intra specion of the eye we note that all damage occurring is due to tension, in fact all of the signs which we must look for are due to tension. The degree or amount of tension above normal may vary or change during the day. Kallner states, "The intra-ocular tension in simple glaucoma reaches its maximum between ten and eleven o'clock in the morning, and drops rapidly to minimum between three and five o'clock in the afternoon.

One of the first items that we will note on the fundus is the cupping, which exists on the temporal side of the disc usually. If the tension is sufficiently great to cause stretching of the fibrous coats the examiner will note a bulging backward of the cup, in a concave manner, in which the arteries and veins will appear constricted and congested. The bulging back we consider as cupping and when accompanied by other signs, mentioned below, the diagnosis of glaucoma is complete. Also in noting this cupping it is well to recollect that a single attack of glaucoma will not cause cupping of the disc, as this is caused by high tension; the cupping reaches to the edge of the disc usually in a sharp slope.

As we note the cupping we become interested in the arteries and veins, especially so in the former as we see the artery pulsate which is not normal. The arterial pulsation is due to the increased pressure on the walls of the vessels, so that with abnormal intra-ocular pressure it is only able to force blood thru at the height of the systole, thus glaucoma can be said to exist.

The tension that exists within the eyes will cause some constriction in their natural movements and it may be necessary for the patient to turn the head, while enjoying a feeling of looking thru a tube, to prevent himself from running into objects.

The light reactions in glaucoma will show that the light minimum is deficient, whereas the light difference is not far from normal. The iris is found to react very sluggishly to light due to the pressure and tension bearing on it.

Numerous cases of glaucoma are self diagnostic by the presence of unequal tension, subnormal sensibility of the cornea, shallow anterior chamber, pallor and concavity of the temporal disc, contraction of the visual fields, especially for colors, enlargement of the blind spot of Mariotte and pulsating arteries.

Failure to recognize glaucoma may lead to equatorial staphyloma as well as hastening the development of cataract. Equatorial staphyloma will occur at whatever spots that are weakened, usually this occurs by the entrance of the vortex veins.

Even after, blindness has become complete, the eyeball may remain painful, so that the patient is not released from his or her torment by failure to act, only if enucleation occurs.

The treatment of glaucoma lies in another's field

and should be handled by this other. Suffice to say that by an iridectomy, the most severe case of glaucoma if taken in time, will respond in such manner that some vision will be left to the unfortunate.

In closing I would warn anyone who is of the opinion that glaucoma can be affixed to any special type of person that they will be correct, but probably would be more correct if the consideration were to be any person and desist in the attempt to categorize glaucoma to a type.

## MAKING IT EASY

I'm a hound for simplicity! Our instructors and authors are well versed in their respective subjects. This, we must take for granted without question (it's healthier). However, many of them cannot present their material so that you and I can digest it without the usual regurgitation.

Recently, I opened a physics text-book I once used at college. In it I found a complicated discourse on concave and convex mirrors. For your benefit I had one of the instructors translate the article so that any d---- fool can now understand it.

When a person looks into the bowl of a brightly polished spoon, he always sees his reflection upside down. This is because the concave part that holds the peas or whatever the person has in his reflector, is concave. If the spoon were flat the image would appear inside out and the peas would roll on to the floor. To illustrate, in eating a plate of soup, images are thrown from the plate to the mouth and drop back to the plate with a splash. This is called refraction and you ought to wear a bib!

That is why the letters in alphabet soup must be put in upside down in order to make the words appear right side up in your mouth. Otherwise you would minee your words at every mouthful and couldn't read what you were eating.

The rays that strike in the exact center of a spoon are reflected straight back, but those that fall on the curved sides are rebounded outward and are crumbed off by the waitress whether she be vertieal or virtuous.

A flat surface such as a knife, will not form the light into a real image and accordingly, you see yourself right side up if you happen to be eating with it. That is why the reflection is right side up, while the stains on your vest are upside down and your table manners are hindside before. An Englishman will drop his "H's" whether they are placed in his broth right side up or down side up.

There now, isn't it simple?

